

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: CHEM 101L

Credit Hours: 1

Course Title: General Chemistry I Lab

Course Prerequisites: Enrollment in or previous credit for Chemistry 101

Textbook: Chemical Education Resources Laboratory Handbook
Chemical Education Resources Modular Lab Program in Chemistry

Course Description:

This course is designed to provide the students with the laboratory skills and knowledge required for a continued study of chemistry and related sciences. The course is designed to reinforce concepts and materials in Chemistry 101.

Learning Outcomes:

At the end of this course, the student will:

- A. demonstrate and practice acceptable and appropriate safety measures in the laboratory;
- B. collect, analyze, and report laboratory data and become proficiency in implementing such data into useful forms in the solution of laboratory problems; and
- C. utilize knowledge of chemical principles and laboratory skills and techniques to perform assigned laboratory experiments.

To achieve the learning outcomes, the student will

- 1. demonstrate lab skills in performing chemical experiments, making observations, analysis, and conclusions. (A)
- 2. apply laboratory safety rules in the lab when carrying out procedures and handling basic laboratory equipment. (A)
- 3. perform scientific measurements using basic and derived units, calculate experimental errors, and use significant figures with calculations. (B)
- 4. use metric units of mass, length, and volume and be able to determine the density of solids and liquids. (B)
- 5. identify substances using physical properties. (C)
- 6. determine the empirical formula of a compound and understand the difference between empirical and molecular formulas. (C)
- 7. write chemical equations and identify unknown solutions base on solubility guidelines. (C)
- 8. calculate the stoichiometry of a reaction. (C)
- 9. perform a series of chemical transformations, starting and ending with metallic copper, and determining the percent copper recovered. (B,C)

10. produce oxygen in the laboratory and understand its reactions with metal and nonmetal elements. (B,C)
11. determine electron transfers occurring during specific redox reactions based on general rules. (C)
12. prepare and standardize a NaOH solution to use for the titration of an unknown weak acid. (B,C)
13. determine the concentration of a vinegar sample by titration. (B)
14. completion of laboratory reports. (B)

Course Requirements

- minimum 80% on safety quiz
- minimum 70% average on lab reports and pre- lab quizzes
- minimum 70% on mid-term and final tests
- safely perform a minimum of 10 assigned laboratory experiments

Course Grading Scale:

- A- 90% or more of total possible points on pre-lab quizzes, mid-term test and final practical test and lab reports and a minimum of 80% on the safety quiz and completion of at least 10 assigned laboratory experiments
- B- 80% or more of total possible points on pre-lab quizzes, mid-term test and final practical test and lab reports and a minimum of 80% on the safety quiz and completion of at least 10 assigned laboratory experiments
- C- 70% or more of total possible points on pre-lab quizzes, mid-term test and final practical test and lab reports and a minimum of 80% on the safety quiz and completion of at least 10 assigned laboratory experiments
- D- 60% or more of total possible points on pre-lab quizzes, mid-term test and final practical test and lab reports and a minimum of 80% on the safety quiz and completion of at least 10 assigned laboratory experiments
- F- less than 60% of total possible points or less than 80% on the safety quiz or failure to complete 10 assigned laboratory experiments

Reviewed by Danny Hoston / May 2009